

MARINE REVIEW.

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Capt. McDougall's Opinion on Freights.

Capt. Alex. McDougall, writing from West Superior to President James Corrigan of the Lake Carriers' Association on shipping matters generally, says in a letter of recent date:

"In reply to your inquiry concerning the amount of coal at the head of the lakes and the effect coal carriers will have on lake freights the latter half of the season, etc., I may say that on the whole things look fairly well for profitable lake freights during the latter half of the season. Usually about the middle of July the docks have the most coal of any time during the year, except the very last thing in the fall. In the past three or four years the docks were practically blocked in July. This year they will nearly all be cleaned up, even should the coal strike come to an end at once, and the stock piles in the country, at railroad yards and all industrial plants which carry stocks of coal, are entirely wiped up, so that it will take a lot of coal to supply the outside coal stations at all the railroads and manufacturing establishments in the northwest."

"The crops throughout the northwest never looked better—doubtful if they ever looked as well as at the present. The deep snow of last winter and the wet weather of this spring were exceedingly favorable to enormous crops of wheat, and as it takes coal to haul wheat in this cold northwest the railroads must have it. I feel confident that from one and a half to two million tons of coal will be wanted at all Lake Superior ports, and if this has to come between the first of August and the first of December, coal freights should average better than 50 cents, for there will be considerable delay loading and unloading through trying to do so much in so short a time. We have not a ton of coal contracted to carry with our fleet and I would rather not carry any on contract. I think the Missabe country can produce all the ore that is wanted, in case an increased output is required."

Inland Navigation.

As announced in THE REVIEW some time ago, the international congress of inland navigation will be held this year at The Hague, and American engineers, especially the representatives from leading societies in this country, will be pleased to learn that arrangements have been made to print the proceedings in English as well as in French and German. The congress, which met in Paris in 1892, in Manchester in 1890, and in other European centers prior to that date, will open on July 23, at the Academy of Fine Arts, at The Hague, and continue for six days. Engineering of London gives the following additional details regarding the programme:

"There are four sections, the first dealing with the construction of canals and harbors, the second with technical treatment, the third with commercial treatment and economical questions, and the fourth with navigable rivers and their improvement. On the subjects to be discussed, preparatory reports are to be prepared to serve as a basis for debate. In the first-named section the dimensions and conditions of canals suitable for high-speed steamers will be the principal topic, the questions set down having reference to the forms and dimensions of the canals which will permit a boat of a given immersed section attaining a desired speed with the least tractional effort; depth, radius and curves, and the best construction for the protection of slopes and berms. The second question put down for discussion embraces every phase of the problem as to which system of power and plant is desirable. In the second section of the congress the means for preventing and breaking up ice blocks comes first, while the second place is given to the consideration of a subject which is of growing interest—canal traction and propulsion. Not only the progress in developing methods of traction, but the influence of the boat model is to be considered, as well as the speed necessary and attainable. The third or commercial section takes cognisance of tolls, classification, traffic returns, the desirability of extra charges for movement of locks, dams, bridges, and for night service, and the exemption or reduction of rates for boats returning empty. The fourth section deals with two questions—the relations between the configuration of rivers and the depths of their channels, and with the regulation of rivers at low water, in which latter the subject of weirs has special reference. Various engineers—French, German, Belgian, Russian, and Dutch—have been appointed to report on several phases of these questions; but in no case is a British or American engineer named. This, however, need not effect the importance of the conference for engineers, for foreign practice must have suggestions for us in all branches, and not least in inland navigation."

Important Mining Deals.

Mr. Harry Oliver of Pittsburgh was in Cleveland during Monday and Tuesday of this week, and to several of the ore sales agents who talked with him he imparted the information that the Carnegie Steel Company had purchased a half interest in the Missabe property known as the Oliver. This means, of course, that the great bulk, if not all, of the Missabe ore to be used this year by the Carnegie Steel Company will come from the Oliver mine, and the output of the mine will be increased accordingly. According to arrangements, this mine is certain to produce 400,000 tons, and the output will probably exceed this amount considerably unless serious labor troubles interfere with mining.

Directors of the Chapin Mining Company, elected in Milwaukee a few days ago, are, with the exception of C. A. Chapin of Niles, Mich., and Attorney R. C. Flannigan of Norway, Mich., all members of the firm of M. A. Hanna & Co. of Cleveland, or trusted employes in the office of that company. The Cleveland directors are M. A. Hanna, L. C. Hanna, D. R. Hanna, C. C. Bolton, Samuel Folsom, A. M. Robbins and Silas Hitchcock. The Schlesingers have resigned from the directorship of the company, and although a full reorganization will not be accomplished and the final ownership of the property determined until certain obligations fall due later on, the management of the mine, through responsibilities undertaken by M. A. Hanna & Co., will be under the direction of the organization just noted.

Lake Measures in the Senate.

With the assistance of Secretary Keep and Treasurer McKay of the Lake Carriers' Association, Senator McMillan of Michigan has been giving very close attention to the work of senate committees on the river and harbor and sundry civil appropriation bills, which were turned over to the senate from the house several weeks ago, and which are to the lakes the most important measures now pending in congress.

Senator Mitchell of Wisconsin has given notice in the senate of an amendment to the river and harbor bill, which modifies the raft towing regulations in as far as they apply to raft towing in the harbors of Duluth and Superior, and although the Lake Carriers' Association has not as yet approved or disapproved the amendment, and is awaiting the opinion of the vessel interests at the head of the lakes, it may be necessary to allow the amendment to go through, in order to secure the passage of the bill and retain the raft towing regulations in full for the St. Mary's river and other connecting waters of the lakes.

Senator Mitchell's amendment, which is intended to apply to Duluth and Superior harbors, provides that in those harbors "rafts shall not exceed 150 feet in width when being brought from the lake into the harbor through the canal across Minnesota point at Duluth, and shall not exceed 200 feet in width when entering said harbor by way of the Superior entry; and such rafts, after entrance to said harbor, shall not, when traversing the channel therein, exceed 1,200 feet in length. Said rafts shall be securely fastened by crossties, or otherwise, to preserve, as far as possible, a uniform width. They may be rafted in boom sticks of such length and method of adjustment as to insure the safety of the logs when being towed in the open lake, and shall, when passing through said canal or entry, be handled by not less than two tugs to each raft, when necessary to preserve uniformly clear and unobstructed the part of the channel not occupied by the raft."

Senator McMillan has prepared four amendments for the civil sundry appropriation bill. One of these provides for an appropriation of \$275,000 for continuing the 20-foot channel work to the extent of widening the Lime-Kilns crossing, and the others provide for new lights as follows: At North Manitou island, Lake Michigan, a light at a point to be designated by the light-house board, \$20,000; range lights and a fog signal on the southwest side of Plum island, Port des Morts passage, Lake Michigan, \$21,000; Crisp's point, Lake Superior, a light, for which amount of appropriation has not as yet been fixed.

A course in naval architecture at foreign technical schools will again be given to the two naval cadets who head this year's graduating class. Three cadets of last year's class are now at Glasgow and Paris, undergoing a course, and they have been notified that on July 1 next they will be appointed assistant naval constructors. It is believed that the construction corps in a few years will have force enough to design and construct all vessels for which congress may make provision.

Next Week's Issue of the Review.

The next issue of the REVIEW will be about three times the size of regular issues, and will in all respects be a number that will undoubtedly meet with favorable acceptance from advertising patrons and from subscribers generally, as well as naval architects, ship builders and the employes of ship yards in all parts of the country. A double page, photogravure supplement, containing in one large sheet a group of excellent portraits of directors of the Lake Carriers' Association, about sixty in number, will accompany an extended description of the steamer North West, which represents the highest type of naval architecture on the lakes. Photographs of all parts of the boat, from the earliest stages of construction up to the time of beginning regular service, have been secured, and the edition will contain several hundred dollars worth of the finest engravings of a ship ever produced in this country. To our regular subscribers no extra charge will be made for the edition or any of the supplements, although this single number will in itself be worth more than the regular yearly subscription price. The REVIEW next week, then, may be delayed a day or two, on account of special preparations being made for the distribution of more than double the number of copies issued regularly.

Low Pig Iron Stocks.

The very low condition of pig iron stocks throughout the country is still a feature of the iron trade, from which the vessel interests of the lakes may draw some encouragement. It is, of course, well known that the stocks of Bessemer pig have probably never been lower than at present. The official report, dated June 1, shows that stocks of coke iron as a whole, both Bessemer and non-Bessemer, had been reduced 126,018 tons during May, and the heaviest reductions were in the districts of Pittsburg Chenango valley and Mahoning valley. It has been just one year since the stocks of coke iron were so light as at present. On June 1, 1893, they amounted to 307,849 tons as against 328,013 tons on June 1, 1894. The reduction during the present month will in all probability be equal if not greater than that of May, as idleness among the furnaces has been even more general, on account of the labor troubles in the coal and coke regions.

In the territory west of the Alleghenies and north of the Ohio there were, according to figures prepared by the Iron Age, only nineteen furnaces blowing on June 1, with a weekly capacity of 29,996 tons, as compared with sixty-five furnaces, with a weekly make of 83,870 tons on April 1. This shows a drop in production of 53,874 tons, and does not take into account the stoppage of plants in central Pennsylvania, or the reduction of output in the south as the result of the coal troubles there.

Changes in the Steamboat Inspection Service.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., June 21.—To properly discharge the duties of an inspector of steam vessels much special knowledge is required, and it is a matter of regret that whenever an administration changes these positions are, as a rule, treated as party spoils. The administration of President Cleveland is following the same policy as that of his predecessors and a general change of inspectors is being made. There are ten supervising districts in the country, and new supervising inspectors are being appointed as their four-year terms expire.

The following changes have been already made: James O'Neil, St. Louis, assumed charge as supervising inspector of the fourth district, May 10, 1894, vice Frank Burnett; James N. Thompson, Memphis, sixth district, May 10, 1894, vice John Ingle; E. P. Chancellor, Cincinnati, vice John Fehrenbatch, May 14, 1894, seventh district. The resignations of the following have been requested: John D. Sloane, St. Paul, fifth district; C. H. Westcott, Detroit, eighth district; Alex McMasters, Buffalo, ninth district; John W. Oast, Norfolk, third district. The resignations of George H. Starbuck, New York, second district, who has held his position eleven years and Matt. O'Brien, New Orleans, who was appointed under the first Cleveland administration, have not been called for and may not be. John Birmingham of the San Francisco district was not appointed until the close of the Harrison administration and he will probably not be asked to resign until his four years have expired.

The eighth district includes all the waters of the lakes north and west of Lake Erie, except that portion of Lake Superior bounded by Minnesota and Wisconsin. The ninth includes the waters of the St. Lawrence, Lakes Erie, Ontario and Champlain. The \$3,000 salary of a supervising inspector is desired in the eighth district by the following applicants: John H. Galwey, M. B. Keane, C. H. Westcott, J. M. McGregor and Wm. M. Daley, Detroit; E. J. Thomas, Frank Lawlor, J. R. Taylor, W. J. Hackett and John Prindiville, Chicago. In the ninth district the following are applicants: Chas. J. Clark, M. J. Galvin, Alex. McMasters, Wm. Dickson, W. D. Robinson, John M. Laughlin and T. M. Moore, all of Buffalo.

Few changes have been made in local inspectors along the lakes. The resignation of Hugh Coyne, Detroit, has been accepted and he has been succeeded by Sidney J. Millen. Cyrus Sinclair, Chicago, has been succeeded by Chas. A. Richardson. The vacancy caused by the resignation and death of Myron Scott, Grand Haven, has not as yet been filled.

The appointment of successors for Frank Van Liew, Port Huron, and Anthony O. Kruger, Marquette, was contemplated, but has been indefinitely postponed. Applications for appointment as local inspectors have been filed as follows: Jno. M. Holland and John W. Brown, Chicago; F. P. Davis and R. S. Langford, Marquette; Jno. T. Farnham, H. C. Sanford, H. Bloecker, S. Newnham and M. Scott, Grand Haven; Andrew Carter, W. F. Cullen, C. D. Dodge and J. G. Purvis, Detroit; H. C. Jordan and Chas. McCrea, Buffalo; Michael Grabarn, W. E. Bell, Samuel W. Gould and James Stone, Cleveland.

The appointment of new supervising inspectors of the eighth and ninth districts is likely to be made in the near future.

Records for the Centurion.

Owners of the big steamer Centurion say that if the times brace up so that they can afford to run the boat to her full capacity, with three boilers instead of two as at present, they feel confident of surprising their friends by making the run between Buffalo and Duluth, 997 miles, in sixty-five hours. The Centurion has a record of 67 hours and 40 minutes between the two ports, made last fall, and which compares favorably with the Owego's time between Buffalo and Chicago.

The Centurion left Buffalo at 10:30 p. m. Oct. 17 and arrived in Duluth on Oct. 20 at 10:20 p. m. This time is from the time the boat left the Buffalo dock until she was tied up at Duluth. There is to be deducted from this 4 hours and 10 minutes, which was time lost on account of two stops, one at Detroit and the other at the "Soo."

On the 6th inst. the boat delivered at Erie and Buffalo a cargo of 3,426 tons of flour, which is very probably the largest cargo of that nature ever carried from Lake Superior.

A Plea for the Disabled Seamen.

Homer J. Carr, writing in a general way in the Chicago Tribune of marine matters in and around Chicago, refers to Capt. John Prindiville, Capt. J. S. Dunham, Capt. John Crawford and others, all of whom, he says, are fortunate enough to have a "snug harbor," into which they can retire when ready to lay at anchor for the last voyage of all. "But there are many old sailors," he adds, "to whom fate has not been so kind. Supervising-General John B. Hamilton, who has done so much to make the marine hospital service what it is, says there is a crying need for a government "Home for Disabled Seamen," and that he has tried in vain to have one established. "Of course, there are marine hospitals, for the support of which every sailor has contributed in the past a certain sum of money each month, and to which he is entitled to go whenever ill or disabled, but, to quote Dr. Hamilton, 'the hospital is not a home for incurables, although they do drift there, some of them, and eventually remain. There are some lake sailors who have been with us for ten and even twenty years, but the fact remains that many of them find their last harbor in the poorhouse and are buried by the county.'"

Government Control of the New York State Canals.

As was expected, the question of canal improvement has assumed prominence in the New York constitutional convention. Among a number of amendments that had already been laid before the canal committee of the convention, is one authorizing, in effect, the transference of the control of the canals to the government of the United States under certain conditions, which include, among other things, the enlargement of the canals so as to connect the navigation of the great lakes with the tide-waters of the Atlantic ocean within the borders of the state, and the construction and maintenance of a ship canal around Niagara Falls.

Action along this line on the part of the constitutional convention would undoubtedly meet with approval from the great majority of the people of New York state, who are not directly interested in the canals, but the city of Buffalo and the railways, as well as the canal boat owners, who have not for years been able to enlist proper support from the state for the canals, are opposed to such a proceeding. This is shown by the action of the conference of canal interests in Albany last week, at which, under the leadership of M. M. Drake of Buffalo, who is employed by the Lackawanna railway, the old policy of partial improvement of the canals was again recommended in opposition to the policy of turning them over to the general government. The railways and the terminal interests of Buffalo fear a radical improvement of the Erie canal by the general government, although 90 per cent. of the citizens of New York state would favor such a move and the entire west and northwest would join in the endorsement.

About June 30, the steam siren now used during thick or foggy weather at Port Austin reef light station, Lake Huron, about 1½ miles from the mainland, off the entrance to Saginaw bay, will be discontinued, and thereafter the fog signal will be a 10-inch steam whistle, sounding blasts of 7 seconds' duration separated by silent intervals of 80 seconds.

FOURTH OF JULY RATES—On the Nickel Plate road are one fare for round trip. Tickets on sale July 3rd and 4th, good returning until the 5th.

Special Rules for Lake Navigation.

Before another season of navigation is opened, an entire system of rules, specially prepared for the navigation of vessels on the lakes, will be formulated and discussed among owners and masters of vessels, and finally presented to congress for its consideration. For some time past, leading members of the Lake Carriers' Association have been considering, with Harvey D. Goulder, Esq., counsel of the organization, the advisability of such a move, in view of the conflict of law on the subject of rules for preventing collisions, and it has finally been decided that Mr. Goulder will prepare, before the close of the present season of navigation, a set of rules applicable to the lakes, so that due time may be given to their consideration before presenting them to congress next winter.

This action has been hastened by the recent ruling from the steam-boat inspectors, that the use of passing signals in fog is a violation of the law, but back of all the differences that have arisen between the steam-boat inspectors and the vessel interests of the lakes, there is the fact that the rules of the inspection service conflict in many ways with laws that are held in some of the courts to apply to the lakes. Only a short time ago, United States District Judge Swan of Detroit held that the law of 1885 for preventing collisions at sea applied to the lakes, while the circuit court of appeals has intimated that this law does not apply to the lakes. Again, the supreme court of the United States has held that the lakes are high seas, and under this ruling all manner of complications may be expected.

The latest act dealing with the subject of rules for preventing collision, that of 1890, which was passed as a result of the recommendations of the International Marine Conference, and which is about to be enforced upon proclamation from the president, may also be held to apply to the lakes, on account of the supreme court ruling referred to, unless proceedings of the congress showing that the rules were not intended for the lakes would prevent such construction being put upon the law. But however this may be, the vessel interests here have decided to seek relief from the constant annoyance to which they are subject, by applying to congress for the passage of an act that will settle all differences as regards rules of the road on the lakes. A radical departure from existing rules is not, of course expected.

The intention, Mr. Goulder says, is to have rules, which he is to prepare, in print about the time that the different branches of the Ship Masters' Association begin holding regular meetings in the fall. They may be considered by owners, underwriters and other interests, if necessary, at the same time, and if an agreement can be reached, especially among the vessel masters, plans will be laid to bring the subject before congress in a forcible way.

"We have," said Mr. Goulder, "probably twenty senators and forty to fifty representatives in the states bordering on the lakes, who are directly interested in the commerce of these waters. Letters endorsing the proposed rules from the several organizations of masters in the different states would, I think be sufficient to exert the necessary influence for the passage of an act embodying the rules, especially as it would be our policy to secure unanimity of action before taking up the legislative part of the work."

Lake Freight Matters.

It is not expected that the strike of iron mine workers, which was inaugurated on the Gogebic range Monday, will be of long duration, and there is only a possibility that the trouble will extend to other ranges and become general. For the present, however, it has still further depressed the lake freight situation, and the delay in resuming mining operations throughout the coal regions of Ohio and Pennsylvania is an additional factor that has acted against an active freight movement. The mine owners of the Gogebic range may be expected to encourage a speedy settlement of the labor trouble, although the shipments from that range show that they have been anticipating the strike, and have made preparations by rushing shipments to meet obstinate resistance from the miners. On June 11 shipments of ore from Ashland aggregated 470,042 gross tons, as against 241,210 tons on the same date in 1893 and 487,717 tons in 1892.

In consequence of these unfavorable features acting against freights, ore rates have dropped to 70 cents from the head of the lakes, 60 cents from Marquette and 45 cents from Escanaba. Several vessels have been chartered within the week for four trips from the head of the lakes at 80 cents. Only a few cargoes of soft coal for the head of the lakes have as yet been secured at a rate of 35 cents. Little coal will be received at Ohio ports until the middle of next week.

According to information in possession of the U. S. navy department there are at present on the Atlantic and Pacific coasts eighty merchant vessels that could be used as transports, and slightly over half this number that could be fitted up with light batteries and do effective duty as cruisers. Most of these ships are located on the Atlantic coast, the Pacific coast having comparatively few vessels that could be used by the government in any emergency.—Army and Navy Journal.

What the Hydrographic Service Proposes for the Lakes.

In an address delivered at a special meeting of the Cleveland chamber of commerce on Tuesday evening, Lieut. George P. Blow, U. S. N., who is in charge of the branch hydrographic office at Chicago, outlined in a definite way the plans of the hydrographic service for operations on the lakes. After referring at some length to the success of the service on the seacoast, he said:

"For some time past, the navy department has taken a deep interest in the great lakes. Officers have been up investigating the facilities of ship yards for construction. Steps were also taken to ascertain how quickly torpedoes could be transported across the country. The Chicago branch office was established last year; first as an exhibit at the World's Columbian Exposition. Later it became a permanent fixture. The work of the hydrographic office upon the great lakes must be necessarily different in some respects from that on the seacoast, where its reputation is so well established and its methods so well known and appreciated. In the first place the conditions are different, and the representatives of the hydrographic office have much to learn from their fresh water brothers. Here piloting takes the place of navigation, and the lead the place of the chronometer and sextant. As a pilot the lake ship master has few equals and no superior. As navigators, as the term is understood on salt water, want of necessity and practice place him at a disadvantage. At present a knowledge of this kind of navigation, is entirely unnecessary, but the time will come—and at no very distant day—when deep water connection with salt water will be established, and the lake steamers will clear for all the foreign markets of the world. Then the value of the hydrographic office will be increased a hundred fold to the lake captain.

"There is one point, however, where the fresh and salt water sailor must join hands, for it belongs equally to piloting and to navigation. I refer to the compass. Together we must fight our natural enemy, that tendency of the magnetic needle to point anywhere but true north. The rapid evolution of the high speed, twin screw, deep draft, steel steamers, such as the North West and Virginia, and the immense cargoes of magnetic ore and machinery carried by lake vessels, makes it a question of vital importance. It is difficult if not impossible to forecast exactly what the future of the hydrographic office system on the lakes will be, as we have much to learn as to the real needs and requirements of its people. The prime object of the office, however, is to be of use to ship masters and ship owners, and we will always gratefully acknowledge and act on any suggestion tending to promote this general object.

Referring to the pilot chart recently issued, Lieut. Blow said that at present, owing to a lack of funds, it is impossible to publish it as a monthly periodical, as the pilot chart of the Atlantic and proposed pilot chart of the North Pacific are. It is hoped, however, that two or more issues may be made for each season of navigation. The most recent information, which would otherwise appear on this chart is now issued in the notice to mariners for the great lakes, which will be published on the 15th of each month. Next year it is intended, if the appropriation is sufficient, to issue this notice each week. These notices to mariners are made up from reports received from the United States light house board, corps of engineers, United States army, reports of the United States life saving stations, United States weather bureau, newspapers, the department of marine and fisheries of Canada, reports of ship masters, and the reports from the branch hydrographic offices. They are intended to supplement the pilot chart and the new sailing directions of the different lakes, now in course of preparation. These notices to mariners are mailed free to each vessel navigating the lakes, and it is hoped that shipmasters will see their value, and report such information as they think will be of interest or value to others. The second pamphlet containing these notices to mariners is referred to elsewhere in this issue, and can be obtained by application at the office of the REVIEW, or by addressing the branch hydrographic office, Masonic Temple, Chicago.

Lieut. Blow says that the branch hydrographic office which will in all probability be established in Cleveland about July 1, will rank at the head of the branch hydrographic offices as far as equipment is concerned. It is hoped that a similar office may be established in Duluth later.

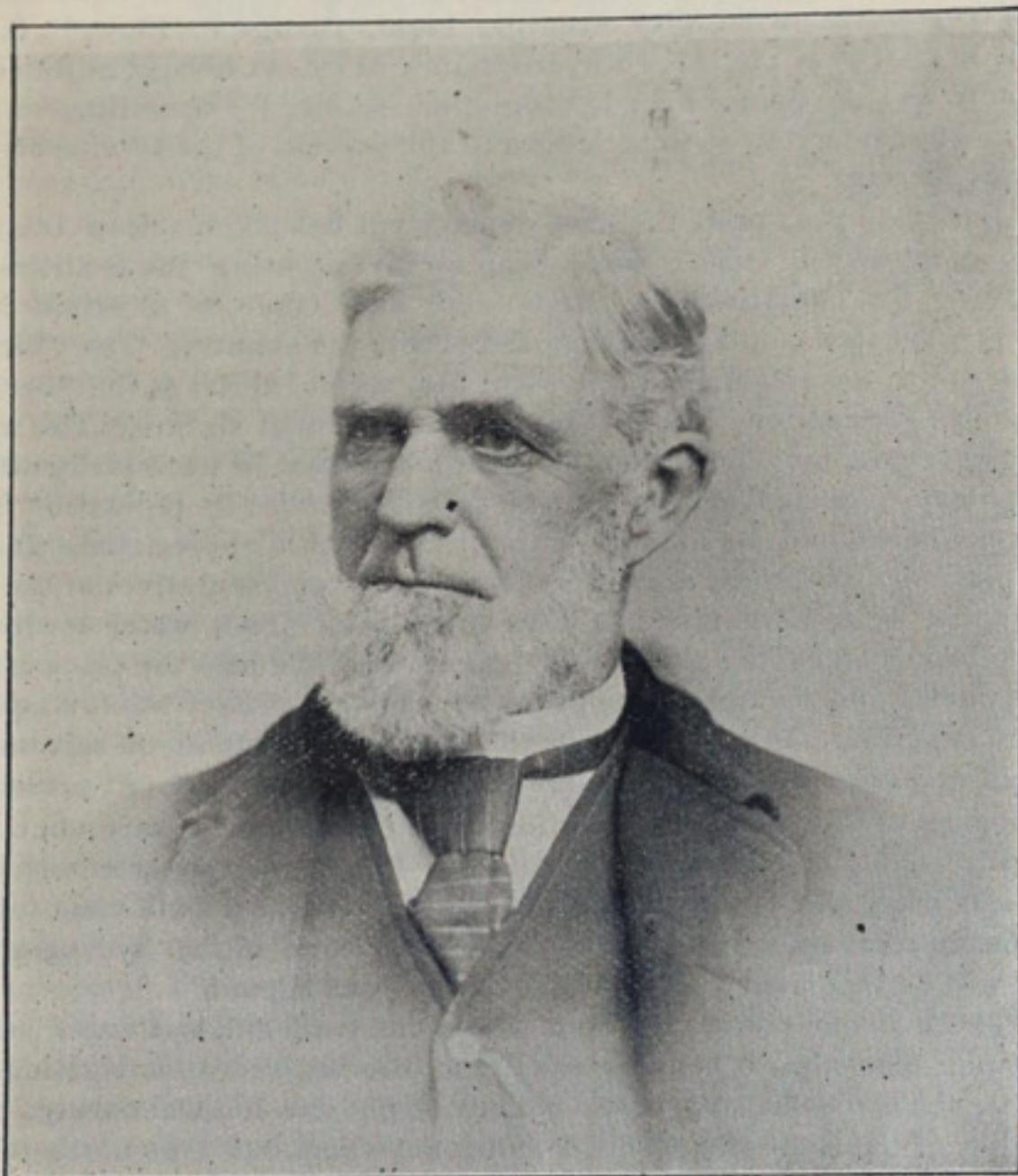
Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principal points of accumulation on the lakes on June 16, 1894 :

	Wheat, bu.	Corn, bu.
Chicago.....	19,280,000	28,940,000
Duluth.....	6,480,000	17,000
Milwaukee.....	1,085,000	3,000
Detroit.....	1,539,000	19,000
Toledo.....	2,496,000	48,000
Buffalo	1,177,000	209,000
Total.....	32,057,000	3,190,000

At the points named there is a net decrease for the week of 236,000 bushels of wheat and 121,000 bushels of corn.

The Late Capt. Smith Moore.



Capt. Smith Moore, who died suddenly of apoplexy at Marquette Friday, had spent almost his entire life aboard ship. He was born near Sheffield, O., a small town on Lake Erie, just west of Cleveland, and began sailing early enough to be given command of a vessel when he was a very young man. After following the lakes for a number of years, he took the bark C. J. Kershaw to the Atlantic and thence to South America. In the following year he made a voyage to the black sea and was subsequently engaged there for some time with Capt. D. C. Pierce, who was also well known in connection with early navigation on the lakes, in getting out railroad ties under a contract with the Russian government.

Shortly after returning to Cleveland upon the fulfillment of the contract referred to, Capt. Moore went to the Pacific and engaged for a time as mate in the trade between San Francisco and Vancouver. Returning again to the lakes about 1870, he brought out the steam barge H. B. Tuttle, which was one of the first of the steamers that engaged in towing barges, after that system of transportation characteristic of the lakes had been inaugurated with the Hackett and Forest City. The steamers Smith Moore and James Pickands, both built in Cleveland under Capt. Moore's supervision, were also sailed by him. He retired from the lakes only three years ago, to take up a home in Marquette, where he had acquired property interests some ten or twelve years ago, and where he was among the leading citizens. Capt. Moore was sixty-five years of age.

Something About Flags.

The flags of the United States navy are made of American bunting thoroughly tested for strength and soaked in salt water and dried in the sun for colors. There may be some hundred and sixty flags on a United States war ship—say twenty-five foreign flags, according to the station on which she will cruise, twenty American ensigns, eleven pennants, four union jacks, twelve rear admiral's flags, if a flag ship, twenty international signals, and the remainder signal and miscellaneous flags. Ensigns, stars and stripes, of course, run in eight sizes, from that used on vessels with very long spars, such as the new Brooklyn and Minneapolis will have, and which is nineteen feet on the hoist and thirty-six feet on the fly, to the little 2.37x4.50 foot boat flag, too small to sport more than the original thirteen states in its union. The No. 1 union jack is the 10.20x14.40 foot union of the No. 1 ensign, and the other jacks conform similarly to the unions of the corresponding ensigns. When a captain puts his ship into commission, he hoists in addition to the ensign, a pennant. This has a fly of seventy feet, the union occupying 17.50, with thirteen stars. The admiral's and vice-admiral's flags of the United States navy, when these ranks are filled, are blue, with four and three white stars respectively. It will be remembered from the Columbian naval review, when our fleet was divided into three squadrons, each in command of a rear admiral, that we preserve the old English distinction of the blue, the red and the white flag. The secretary of the navy flies a blue flag with four white stars, an anchor and cable, the assistant secretary reversing the colors. The president's flag is blue, with the arms of the United States, the eagle and stars white, the shield preserving the "tinctures."—Marine Journal,

Passengers on Harbor Tugs.

EDITOR MARINE REVIEW: I clip from your edition of June 14, 1894, an article of which the following is a copy:

'In discussing with a party of vessel owners the subject of harbor tugs carrying passengers, Mr. H. M. Hanna brought up an interesting point, the other day. He said that he had reason to investigate the subject in the interest of a Toledo fishing and hunting club and took the matter to Gen. Dumont of the steamboat inspection service, who held that the law requiring life preservers, etc., was never intended to apply to boats running within harbor limits, and that there could be no prosecution for carrying small parties of passengers within such limits. The law was intended, he held, to prevent harbor tugs or other small freight boats engaging in passenger traffic for hire.'

Fearing that the above statement may be the means, if not corrected, of leading tug boats into a violation of the law, under the mistaken notion that they can carry persons other than their crew, without incurring the penalties of the law for non-equipment, providing such persons are not carried for hire, and that I have officially sanctioned such construction of the steamboat laws, I hasten to inform you, that, if Mr. Hanna is not misquoted in the article quoted from your paper, Mr. Hanna himself must be mistaken as to the tenor of the alleged interview with me on the subject he refers to, a fact that I think must be conceded when it is known that for years I have published in the Inspector's Manual a decision of the solicitor of the treasury, supported by court decisions, directly contrary to those attributed to me by Mr. Hanna as alleged. The decision referred to is on pages 301 to 305 of the manual, under the title of "Towing Steamers.—Towing steamers can not legally carry any persons except crew." The concluding portion of such decision I quote as follows:

"Mr. Justice Grier, in the case of the Philadelphia and Reading Railroad vs. Derby (14 How., 486), said:

"When carriers undertake to convey persons by the powerful but dangerous agency of steam, public policy and safety require that they be held to the greatest possible care and diligence. And whether the consideration for such transportation be pecuniary or otherwise, the personal safety of the passengers should not be left to the sport of chance or the negligence of careless agents."

"That was the case of a person who was transported free—a stockholder of the company.

"Although I have been unable to arrive at a satisfactory conclusion as to the meaning of the term 'passenger,' as employed by congress in the act, still, upon a consideration of what I deem the true intent and meaning of the act and the mischief it was intended to provide against, I am of the opinion that a towing boat can not lawfully carry persons other than the crew, under any circumstances without first complying with the terms and conditions imposed by the act on ordinary passenger vessels. Any other construction of the law would open the way to an evasion of its requirements.

BLUFORD WILSON,

Solicitor of the Treasury."

Since the decision just quoted was made, however, congress has, largely through my instrumentality, amended section, 4427, revised statutes, allowing tug boats, under certain conditions, to carry persons other than the crew, which amendment, approved July 9, 1886, is quoted as follows:

"An act relating to the licensing of vessels engaged in towing, to carry persons in addition to their crews: Be it enacted, etc., that any steam vessel engaged in the business of towing vessels, rafts, or water crafts of any kind, and not carrying passengers, may be authorized and licensed by the supervising inspector of the district in which said steamer shall be employed, to carry on board such number of persons, in addition to its crew, as the supervising inspector, in his judgment, shall deem necessary to carry on the legitimate business of such towing steamers, not exceeding, however, one person to every net ton of measurement of said steamer. Provided, however, that the person so allowed to be carried shall not be carried for hire.

"Sec. 2. That every steam vessel licensed under the foregoing section shall carry and have on board, in accessible places, one life-preserver for every person allowed to be carried, in addition to those provided for the crew of such vessel."

JAS. A. DUMONT,

Supervising Inspector-General.

WASHINGTON, D. C., June 16, 1894.

[Mr. H. M. Hanna has left Cleveland for the Gulf of St. Lawrence on his yacht Comanche, and it is impossible at this time to submit this correspondence to him, but his attention will be directed to it as soon as possible. Of course it is possible that the REVIEW has not used his exact language, but he is certainly of the opinion, as a result of the Toledo investigation referred to, that the law was not intended to apply to harbor tugs making short trips with passengers within harbor limits, where no charge is made.—ED.]

IF YOU SEND \$1 TO THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, O., FOR FOUR STEEL ENGRAVINGS OF U. S. WAR SHIPS, ON HEAVY CARD, AND ARE NOT SATISFIED WITH THEM, WE WILL REFUND THE MONEY.

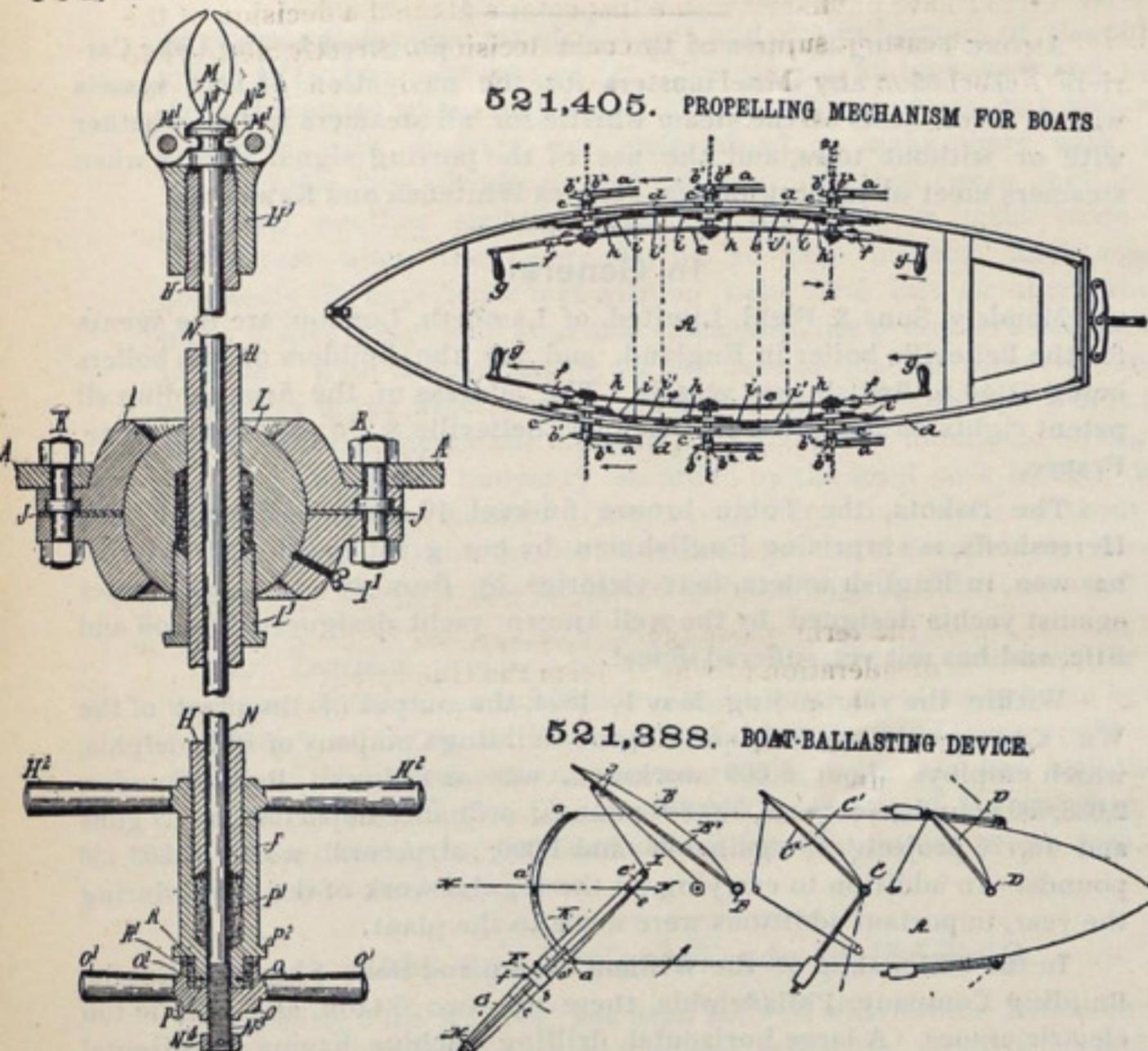
Illustrated Patent Record.

SELECTED ABSTRACTS OF SPECIFICATIONS OF A MARINE NATURE—FROM LATEST PATENT OFFICE REPORTS.

521,208. DIVING APPARATUS. John Day, George Day and Jenkin Jenkins, Maesteg, England. Filed Sept. 25, 1893. Serial No. 486,444.

Claim. First, in a diving apparatus, such as described, the combination with the hermetically closed vessel having the ballast chamber in the bottom provided with fixed projections and the angle irons slotted transversely, secured beneath the bottom of the vessel, of the ballast blocks having one edge supported on said projections and a T-shaped ballast supporting key having its head working through the slots in the angle irons and its shank extended through to the inside of the vessel whereby the key may be turned and the ballast released when desired. Second, in a diving apparatus, the combination with the hermetically closed vessel having the packed bearing in its wall, of the tube passing through said bearing and carrying a tool upon the outer end, the handled nut screwing upon its inner end and having the packing gland therein, the rod passing through the nut and tube for operating the tool, the nut on the inner end of the rod secured to the handled nut on the tube whereby the rod may be given a longitudinal movement.

521,208. DIVING APPARATUS.



521,405. PROPELLING MECHANISM FOR BOATS Charles P. Dieco, Owensborough, Ky.
Filed Aug. 14, 1893. Serial No. 483,112.

Claim. First, in combination with a boat, two or more brackets attached to its sides, and paddle rods having their inner bearings in said brackets, of a horizontal bar, *e*, which connects the inner pendent, crank arms of said rods, and is provided with upturned ends having hand-holes, as shown. Second, in combination with a boat, the swinging paddle rods, and horizontal bars, *e*, which connect the inner ends of the crank arms, and are constructed with upturned ends, of the detachable handle arms, *f*, having sockets to adapt them for attachment to the ends of said bars *e*.

521,388. BOAT BALLASTING DEVICE. James P. Pool, Brooklyn, N.Y. Filed Oct. 25, 1893. Serial No. 489,150.

Claim. First, as an improvement in means for ballasting boats, the combination with the boat body and the sail boom, of a weighted boom pivoted on the boat, connections between such sail and weight booms, arranged substantially as shown, whereby such weight booms will be projected at right angles from the sail to the windward. Second, in a ballast means for boats, the combination with the boat having ways *a a'*, inclined downward and inward from the outer edges of the taffrail and the sail boom having guides, of the ballast boom having guides at the inner and outer ends and pivotally connected at its inner end to the boat, a roller weight longitudinally movable on the ballast boom adapted to travel on the ways *a a'* when at its innermost position, a cable connected to its weight, extended outward over the outer boom guide, then inward over the inner boom guide, then over the sail boom guides, and a winch or fastening on the boat for the free end of such cable, and means for pulling the weight inward.

ONE FARE FOR THE ROUND TRIP—To all points on the Nickel Plate road within 200 miles of starting point, account of Fourth of July. Tickets on sale July 3rd and 4th, good returning until the 5th.

July 3

Publications.

Students of naval warfare or young men ambitious of becoming naval officers, will find an excellent text book in "Elementary Naval Tactics," by Wm. Bainbridge Hoff, commander, United States navy. It is published by John Wiley & Sons, No. 53 East Tenth street, New York. It is not the ships with the most guns or the most knots in them that will necessarily win the next great naval battle.

"The Navigator's Pocket Book," by Capt. Howard Patterson, is a leather covered book full of meaty definitions for navigators. Judging from a brief glance at the book, there is no necessary information omitted. While it is not as necessary for lake captains as it is for sea-going masters, it will prove very interesting to those familiar with the subjects contained. It is published by Chas. Scribner's Sons, New York. An illustrated nautical dictionary has been prepared by the same author.

There is a popular belief that the science of navigation is beyond the attainment of most mortals, but it can be mastered as other sciences by study. The "Primer of Navigation" by A. T. Flagg, head master of the marine school at South Shields, and published by Macmillan & Co., 66 Fifth avenue, New York, treats of such features of the science as effects of tides and currents, how to find deviation of the compass, etc. The price of the book is only 35 cents. A portion of the book is devoted to the compass, and rising young men in the lake trade can not know too much about that instrument.

A copy of the directory of iron and steel works of the United States, 12th edition, corrected to March 1, 1894, and published by the American Iron and Steel Association, has been received from Mr. Swank, who is known throughout the world in connection with the publications of this association. Several new features have been added to this work, which now embraces a full list of the blast furnaces, rolling mills, steel works, tin plate works, forges, bloomeries, rod mills, cut and wire nail works, horse nail works, car axle works, car wheel works, car builders, locomotive works, cast and wrought iron pipe works, ship building and bridge building works in the United States, to which is added a list of the iron and steel works of Canada and Mexico. The price of the book is \$5, or 20 shillings, and orders, inclosing checks or money orders, should be addressed to James M. Swank, 261 South Fourth street, Philadelphia, Pa.

Notices to Mariners.

June 18, is the date fixed for the re-establishment of a coast light of the fifth order, showing fixed white, varied by a red flash every forty-five seconds, in the light house on the northerly side of the mouth of Manistee river, Lake Michigan. The light may be seen fourteen miles in clear weather, but is obscured when bearing east-south-east at points less than 800 feet from the outer end of the pier. On the same date a fixed red light will be established near the outer end of the north pier, 2022 feet west-north-west from the above described light, and with it will form a range for approaching the harbor. This light will be shown from a lantern in the inclosed glazed end of a conduit extending shoreward 290 feet to the new fog signal house on the north pier. The steam fog signal will be moved, without change of characteristics, from the south pier to the new house on the north pier, and the two fixed red lights on the south pier will be discontinued.

About June 23, Sheboygan, Wis., pierhead (front) light (fixed red) will be moved 92 feet nearer the outer end of the north pier and exhibited from a lantern in the inclosed glazed end of an elevated conduit extending shoreward 264 feet to the pierhead light tower. The distance between the lights will then be about 270 feet, and the lights will, as heretofore, form a range for approaching the harbor, the range line approximating the line of direction of the outer end of the north pier.

Official Numbers and Tonnage.

The bureau of navigation, E. T. Chamberlain commissioner, assigned official numbers and tonnage to the following steam vessels of the lakes during the week ending June 16: Pleasure, Detroit, 873.01 tons gross, 545.14 net, No. 150,670; Fabian, Buffalo, 71.63 tons gross, 35.81 net, No. 120,969; Leslie, Chicago, 38.20 gross, 19.31 net, No. 141,334; Rosalie B., Detroit, 1874 gross, 9.37 net; No. 111,062.

A novel electrical submarine vessel was recently tried on the Mersey before representatives of the British and other governments. This craft, which was designed by J. F. Waddington, who was the designer and constructor at Sewall's yard in Bath, Me., of the new steel ship Dirigo, is 37 feet long, with an extreme diameter of 6 feet. She is fitted with two water-tight bulkheads, and has an automatic adjustment for keeping her on an even keel. The motive power is obtained from forty-five cells of storage battery which will drive her for ten hours, at eight miles per hour, 110 miles at half speed or 150 miles at low speed. The fresh air supply is drawn as required from the compressed air in the end compartments.

"ROPER'S LAND AND MARINE ENGINES," BOUND IN MOROCCO WITH FLAP AND POCKET, WILL BE MAILED TO ANY ADDRESS FOR \$3.50 SENT TO THE MARINE REVIEW, CLEVELAND, O.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department contain the names of 3,761 vessels, of 1,261,067.22 gross tons register in the lake trade. The lakes have more steam vessels of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of steam vessels of 1,000 to 2,500 tons on the lakes on June 30, 1893, was 318 and their aggregate gross tonnage 525,778.57; in all other parts of the country the number of this class of vessels was, on the same date, 211 and their gross tonnage 314,016.65. The classification of the entire lake fleet on June 30, 1893, was as follows:

Class.	Number.	Gross.
Steam vessels	1,731	828,702.29
Sailing vessels.....	1,205	317,789.37
Canal boats.....	743	76,843.57
Barges.....	82	37,731.99
Total.....	3,761	1,261,067.22

The gross registered tonnage of vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	Number.	Net Tonnage.
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
1892.....	169	45,168.98
1893.....	175	99,271.24
Total.....	991	471,891.97

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.

	St. Mary's Falls Canal.			Suez Canal.		
	1893	1892.	1891,	1893.	1892.	1891.
No. vessel passages	12,008	12,580	10,191	3,341	3,559	4,207
Ton'ge, net regist'd	9,849,754	10,647,203	8,400,685	7,659,068	7,712,028	8,698,777
Days of navigation..	219	223	225	365	365	365

Entered at Cleveland Post Office as Second-class Mail Matter.

OUT OF about twenty masters of steam vessels spoken to within the past two weeks, regarding the matter of blowing passing signals when vessels are not in sight of each other, not one was willing to admit that he had so far this season complied with the law as construed by the steamboat inspectors. Of course, there has not been much thick weather on the lakes of late, but in all cases where the absence of bad weather was referred to in answer to questions about compliance with the rule, there was also evidence of a disregard for the resolutions that have caused so much unfavorable comment about the inspectors. Vessel masters who have tried to do their duty, but who have become restive under the conflicting features of navigating rules, will be encouraged by the plans of the Lake Carriers' Association, outlined elsewhere in this issue, for special rules of the road to govern the lakes.

IT IS expected that Secretary Carlisle will, in his next report, urge upon congress the necessity of combining, under one executive board within the treasury department, the several bureaus of that department having jurisdiction in marine affairs. The scheme for a combination of the offices of the commissioner of navigation, steamboat inspection, revenue marine, life saving service, light-house board and one or two other branches of the treasury department, which has been talked of for several years past, originated with a previous Democratic administration, and on this account it is thought that a recommendation from the secretary of the treasury favorable to such action would now meet with consideration. It is at least certain that some of the heads of the bureaus referred to are preparing to lend aid to the movement.

CRITICISMS that have been published regarding the new Hay lake channel in advance of its completion, and before the work of buoying or properly marking it has been begun, are entirely without foundation and unjust to the government engineers. It will be time enough to complain about this channel if it proves wanting after a fair trial and when the work of the contractors has been accepted. Both Mr. John Gordon and F. P. Gordon say they were in no way responsible for the story sent out from Buffalo several days ago.

GEORGE P. BLOW, naval officer in charge of the branch hydrographic office at Chicago, has suggested the idea of establishing one or more school-ships on the lakes, similar to the school-ship St. Mary's of New

York. Supporters of the New York school have had a hard time securing money to keep the boat in commission during the past two or three years, and although it may not seem popular to discourage a movement of this kind on the lakes, it is more than probable that the vessel owners from whom support might be expected, either in a direct way or through their influence with congress, would look upon the proposition as a fad.

ON THE question of harbor tugs carrying passengers, Gen. Dumont of the steamboat inspection service makes a statement, in a communication elsewhere in this issue, that can not be misunderstood. The tugs are not to carry passengers under any circumstances, unless they have special license therefor. Whatever may have been the conditions attending the case to which Mr. H. M. Hanna referred, it is well to have this plain statement of the law from the chief of the inspection service.

SENATORS of Minnesota and Wisconsin have succeeded in having passed in the senate a joint resolution providing for the proposed survey of Duluth and Superior harbors, through which it is intended to secure continuous appropriations for dredging the entire basin to a depth of 20 feet. If the house concurs in this resolution at the present session, the cities at the head of the lakes will be in advance of other places in preparing to meet the requirements of the 20-foot channel.

AMONG leading features of the rules to be proposed by the Lake Carriers' Association and vessel masters for the navigation of lake vessels will be three blasts of the steam whistle for all steamers in fog, whether with or without tows, and the use of the porting signal always when steamers meet at turning points, such as Whitefish and Keweenaw.

In General.

Maudslay, Sons & Field, Limited, of Lambeth, London, are the agents for the Belleville boiler in England, and are the builders of the boilers being fitted to British war vessels. The address of the firm holding all patent rights on the boiler is Delaunay, Belleville & Co., St. Denis, Seine, France.

The Dakota, the Tobin bronze fin-keel 10-rater, designed by the Herreshoffs, is surprising Englishmen by her great speed. Already she has won, in English waters, four victories by from two to four minutes against yachts designed by the well known yacht designers, Watson and Fife, and has not yet suffered defeat.

Within the year ending May 1, 1894, the output of the plant of the Wm. Cramp and Sons Ship and Engine Building Company of Philadelphia, which employs about 6,000 workmen, was as follows: Brass foundry, 2,038,000 pounds; increase, 550,887 pounds; ordnance department, 169 guns and 16,176 projectiles, against 46 and 1,300; structural work, 31,303,436 pounds. In addition to carrying on the regular work of the shops during the year, important additions were made to the plant.

In the boiler shop of the William Cramp and Sons Ship and Engine Building Company, Philadelphia, there are two 50-ton and one 10-ton electric cranes. A large horizontal drilling machine, having a horizontal motion of 14 feet and a vertical motion of 8 feet, is also driven by electricity. This machine is particularly convenient, as all the switches operating the various traverses and spindle motions can be grouped together very neatly. Portable electric drills are also largely used in the shipyard, and in planing the decks of ships an electric planer is used.

The city of Glasgow has presented a steam life-boat, designed by Watson, to the English life-boat institution for service at Harwich. Her dimensions are: Length over all, 53 feet; beam, 16 feet; depth, 5½ feet; loaded draught, 3 feet 3 inches. She carries about forty passengers and runs ten knots per hour. The engines are compound, and develop 200 I. H. P., working two turbines. The boat is jet propelled. There are two jets for forward propulsion and two for aft propulsion, and there is a jet on each side for lateral propulsion, which will enable the lifeboat to keep herself clear of the broadside of a ship. This novel feature will be of special advantage, as one of the greatest dangers arises from being dashed to pieces against the side of a ship.

The new electric search light at Sandy Hook is the most powerful in the world. The greatest intensity is 194,000,000 candle power. It is claimed that a person will be able to read a newspaper ten miles distant by the light, and that the rays may be seen at a distance of over 100 miles. Vessels can be detected 20 miles away and men-of-war distinguished eight miles. It is constructed especially for coast defense and intended to be placed so far inland that no shot from an enemy can reach it. The intensifying power of the mirror is 4,250. The average intensity of rays of the electric arc acting on the mirror is 45,600 candle power, and the product of both gives the immense value of 194,000,000 candle power. By means of electric motors and switches the search light can be controlled so that the beams of light can be turned in any direction. For signaling or telegraphing it can be so arranged as to give flash lights at any desired interval. The whole apparatus stands on top of a specially constructed tower 100 feet above the sea level.

Learman's Volunteer Life-Prsserver.

A few weeks ago the REVIEW referred briefly to the device shown in the accompanying engraving. It is the invention of G. W. Learman of Cleveland, who has brought out a number of life saving appliances, notably



a patent boat detaching hook. This device is a combination cork jacket and hood, and its advantages are apparent at a glance. It is light, made of oil skin, with two air tubes, one over each ear, which admit of no chance of water getting into the nose or mouth. No matter how the sea may roll, the wearer of this device can breath, and this is its main advantage, as it is well understood that more lives are lost in the water from the smothering action of a seaway than from inability to keep afloat.

The inventor of this life preserver has named it the "Volunteer," in honor of the volunteer

service so often called for aboard ship and also in memory of the old volunteer life crews. He says of it: "Sailors can all look back and call to mind shipmates whom they knew to be good swimmers, but who, when overtaken with disaster, and determined to make shore with good life jackets, met death in the attempt, as they were met by one sea after another striking them in the face, in most cases probably just when they were trying to take breath. Such was undoubtedly the experience met with on Lake Erie last October, when so many bodies were found after that storm with life preservers well fastened to them. With the protection for the face in this life preserver, and no possibility of the water working up under the mask, the wearer of it is inspired with confidence the moment he strikes the water, and strength of body is added to the buoyancy accorded by the solid cork jacket. When on a lee shore any member of a crew can take a line ashore without fear of being drowned, and the device is also a protector from severe winds in cases where the crew may be forced into the rigging, adrift on a raft or in a life boat."

Mr. Learman proposes to use also with this life preserver for cold weather a combination suit, made of light water-proof material, to be worn as a diver's suit is worn. With a suit of this latter kind there would not be danger of the person wearing it even getting wet. He has had the life preserver tried off the Cleveland breakwater, one of the assistant light keepers remaining in the water with it for 20 minutes when seas were washing over the breakwater.

Lake and Freight Trade in 1859-60.

Recently THE REVIEW has been favored with several letters containing newspaper clippings colored by age, and some very concise and correct information carefully written out, chiefly in reference to early days in the lake trade. They are from the log book of Capt. Charles Gale, Sombra, Ont., who is well known to many prominent business men in Cleveland and other lake ports. About the year 1859 he was instrumental in purchasing and shipping from Detroit a number of cargoes of staves to Liverpool. From the clippings it is learned that four vessels sailed within a short time of one another. They were the brig John G. Deshler, Capt. Gale, schooner R. H. Harman, Capt. Burk, schooner John F. Warner, Capt. A. R. Manning and bark Vanguard, Capt. J. Davis.

When Capt. Gale left Quebec there were three lake vessels there bound for Liverpool—the schooner Douseman, owned by Mr. Winslow of Cleveland, Grand Turk of Detroit, and the Gold Hunter, owned by Mr. Mather of Chicago. It is mentioned that when the Deshler entered salt water the density of it buoyed her up six inches. The Deshler left Quebec June 3, and when five days out she sprung her main mast, but made the voyage in twenty-six days. Her cargo consisted of 88,000 staves. The pilots stated that these lake-built vessels surprised the English navigators, and that no craft could touch them when on a wind and they could use the centerboard. The Warner and Harman were owned by T. P. Handy, a Cleveland banker, the Vanguard by Johnson & Tisdale, and the barkentine D. C. Pierce was sailed by Capt. Pennington and owned by Quayle & Martin. In addition to those mentioned, the following boats were engaged in the lake and Liverpool trade in 1859: Schooner Indus, brig Caroline, sold in Belfast, brig Black Hawk, barkentines Chieftain and Kershaw, owned by Barney & Wareing of Cleveland, schooner Heligoland, owned by J. F. Borges, Cleveland and sailed by Capt. H. Rummage, whose son is well known by lake men. The Deshler, which was sailed by Capt. Gale, was owned by R. H. Harman, president of the Cleveland City Forge & Iron Company. In 1860 she went to Glasgow with staves. The other boats mentioned continued in the stave trade, and the Black Hawk, Chieftain and Kershaw went from England to Constantinople with cargoes and

were employed freighting ties for a railroad. The Douseman, Pierson and Gold Hunter took wheat cargoes that year. The Pierson was sailed by Capt. Root from Vermillion.

The Gold Hunter, owned by Mr. Mather of Chicago, had an ex-printer for a captain. He sold his cargo in Cork and kept all the money. The owner crossed over from New York and ordered the boat to Androssen, or some Scotch port like that, but she did not appear. He was left penniless and had to borrow money from Capt. Gale. He secured a coal cargo from Lord Eglinton to Montreal. Capt. Gale asks an opinion on the chicanery of the printer captain. The Deshler made one trip from Lorain to Liverpool with square oak timber and returned to Chicago with a cargo of crockery and rice. Speaking of the two schooners built for Baltimore, Md., parties by Lafrinier, he suggests that Capt. Geo. Warner could give some information of early days, and adds that he was a clever captain. "No collisions with him in his sailing; he kept the four Ls—lead, lookout, latitude and longitude—in view, and was never in trouble."

Capt. Gale refers to the death of Capt. William Buffington by saying that he was lucky to have time to die where he did. He was mixed up in a mutiny on the United States brig Somers—and there was some hanging done. It is said that when young he was ambitious of becoming a pirate. Most boys get that way. The brig was a beauty and would sail 14 knots with wind abeam.

Miscellaneous Mention.

In thirty-three lockages at the Sault canal Monday, ninety-six boats, carrying 81,464 net tons of freight, were locked through. This breaks all previous records.

Capt. James Reid of Bay City has sold his iron tug Protector to Edmund Hall of Detroit for \$12,000. The Protector is the New York fire boat which Capt. Reid purchased, with a view to towing the Columbus caravels from New York to Chicago.

Cyrus P. Leland, auditor of the Lake Shore Railway Company, and one of the best known statisticians connected with the transportation business of the country, died at his home in Cleveland Wednesday. Mr. Leland was a wonder in the railroad world. He has been called the "King of Figures."

Mr. E. T. Chamberlain, commissioner of navigation, has been accorded an urgent invitation to make a trip up the lakes during the present season. Representatives of the Lake Carriers' Association who visited Washington lately were impressed with Mr. Chamberlain's courtesy and the interest shown by him in the office to which he was recently appointed.

Attorney Harvey D. Goulder of Cleveland is a candidate for common pleas judge. There are five judges of the common pleas court to be elected in Cuyahoga county this fall, and although the salary is but \$5,000 a year, Mr. Goulder seems willing to give up direct attention to his profitable practice and seek the office, if it can be secured without a contest of the usual political kind. It is understood, however, that in event of success, he will make special arrangements for the care of business of his clients.

Friends of Passed Assistant Engineer W. M. McFarland of the bureau of steam engineering, navy department, will regret hearing that he is about to go to sea. Mr. McFarland expects to join the San Francisco about the end of the present month and will be away for at least three years. The journal conducted by the society of naval engineers, which Mr. McFarland has edited for some time past, will be edited by Passed Assistant Engineer Robert S. Griffin, who is also one of the bright men of the navy.

The MARINE REVIEW takes little stock in the fad for coupons and prizes, which have had as objects, for the most part, views of the world's fair, but recently we purchased a complete book of views from a reliable publisher at a cost much lower than would be required by presenting coupons and money for the book in parts. If any of our readers want a copy of the "Columbian Gallery," which is equal, except in binding, to works selling for \$6 and even \$10, they can have it by sending \$2 to the MARINE REVIEW, 516 Perry-Payne building, Cleveland, O., and paying the express charges, which will be about 50 cents. Any one ordering through us can have their money refunded if the book does not prove satisfactory. This notice will only appear once and is to accommodate our readers.

It is probable that the propellor wheels made by H. G. Trout & Co., of Buffalo, N. Y., are more generally distributed throughout this country than any other article of manufacture known to the lakes. Only a few days ago, the Buffalo firm received a letter from Capt. J. H. Johnson of the steamer Volga, away out in Portland, Ore., saying that by the use of a Trout wheel his boat had increased her speed two miles an hour.

FOR THE CHRISTIAN ENDEAVOR CONVENTION—At Cleveland, the Nickel Plate road offers a rate of one lowest first class fare for the round trip and a splendid passenger service. Tickets on sale July 9, 10, and 11. Return limit Sept. 15.

Around the Lakes.

McElroy's river steamer Unique was launched at Marine City, Saturday.

Secretary Keep of the Lake Carriers' Association was married a short time ago and has taken a vacation. He will spend several weeks abroad.

Capt. James Martin of the steamer Roanoke has been appointed marine superintendent of the Flint & Pere Marquette Railway Company's steamers with head office at Milwaukee. Capt. Lon. Cox will succeed Capt. Martin in the Roanoke.

Buffalo tug companies have warded off another threat of competition. The tug Fabian, built by the Union Dry Dock Company for O. W. Cheney, and which was expected to begin service as a rival of the old lines, is ready for business, but carries the colors and the name of the Maytham line.

L. P. & J. A. Smith, Cleveland dredging contractors, have put another dredge in service at the mouth of the Detroit river, where they are working on a section of the 20-foot channel. One of the steel tugs, recently completed by the Globe Iron Works Company for this firm, will also be used on this contract.

A side-wheel steamer somewhat smaller than the Frank E. Kirby will very probably be built by the Detroit Dry Dock company for A. Wehrle of Sandusky, to take the place, next season, of the steamer City of Sandusky, running between Put-in-Bay and Sandusky. Negotiations for a contract are pending.

Myron Scott, who was local inspector of boilers at Grand Haven for eight years, died at his home in that city a few days ago. Before being appointed boiler inspector, he was for a number of years employed as chief engineer by White & Friant owners of tugs and lumber carriers. Mr. Scott was forty-nine years of age.

Of twelve boats owned by the Marinette Barge Line of Chicago, and put on the market for sale a few months ago, all but one, the Mike Corry, have been sold. Within the past few days the schooner Sunrise has been sold to W. T. Farwell of Chicago for \$6,000, and the William Grundy to Thomas Curry of Port Huron for \$4,500.

Underwriters who own the steamer Dean Richmond, which foundered with a heavy loss of life off Dunkirk, Lake Erie, last October, have engaged Murphy Bros. of Detroit, to locate the wreck and if possible secure the machinery and part of the cargo. The wrecking expedition is about ready to begin work. A large quantity of pig lead forms the most valuable part of the cargo.

The Northern Steamship Company announces the appointment of R. F. Downing & Co. of New York, with a branch in London, general European passenger agents in charge of all passenger traffic originating in the United Kingdom. M. S. Sutherland, European agent Downing's American despatch, No. 71 Queen street, Glasgow, Scotland, will be the direct representative in charge.

The latest bulletin from the light-house board regarding aids to navigation is dated June 1, and directs attention to 34 changes in lights, fog signals, etc., on the lakes. A copy of this bulletin may prove valuable to any lake master. It can be obtained by mailing a request for it to the light-house board, Washington, D. C., or by applying to the light-house inspectors at Buffalo, Detroit or Chicago.

The smoke inspector of Chicago, a city official, has been making experiments with oil as fuel for harbor tugs, with a view to enforcing its adoption in order to overcome the smoke nuisance. On a trial made with one of the harbor tugs Friday, the steam pressure obtained was very much below that secured with soft coal. The tug men say also that the cost of fuel oil will be much greater than soft coal where the same amount of power is developed, but the inspector intends to continue the experiments.

A pamphlet entitled "Notice to Mariners, No. 2," has just been issued by the United States hydrographic office. It contains a number of recent notices from the light-house board regarding recent changes in aids to navigation on the lakes and also a test of Canadian charts of the St. Lawrence river, that can be obtained through the hydrographic office. Copies of the bulletin can be had at the office of the MARINE REVIEW, or will be mailed to any address from the United States branch hydrographic office, Chicago.

A few days ago, the steamer N. K. Fairbank was bought at marshal's sale in Buffalo by J. H. Bartow and Capt. John W. Moore of Cleveland, and the consideration named, \$10,510, was contrasted with the Inland Lloyd's valuation of the boat, \$35,000. The difference was referred to as an indication of the shrinkage in values of vessel property, but the figure at which the boat was purchased did not represent her value. The purchasers were formerly owners of the boat, which they sold about a year ago to A. S. Pierson of Cleveland, and in again taking back the vessel their claims were of prime importance.

At \$12,450 the Union Dry Dock Company of Buffalo was more than \$3,000 lower than all competitors in the competition for building a steel

fire boat hull for the Cleveland fire department. Another new boat, the Cleveland, just completed for the same service, was given a trial a few days ago, and is pronounced a success as regards propelling and pumping machinery, but the present officers of the department are determined upon steel as the best material for hulls in fire boats, as a result of experience with wood in the first boat built for the city. Thomas Manning, Jr., & Co., the local firm that has equipped the Cleveland boats with pumping machinery—and the last boat with propelling power—have been especially successful in this line of work.

The old superstition of sailors about starting anything on Friday was to some extent shaken by the fact that the schooner Myrtle, which was built at Milan, O., was commenced on Friday, was launched on Friday, started on her first trip on Friday, and sailed the lakes successfully on Friday. The superstition was strengthened again, however, by the fact that she was wrecked on Friday, in the big storm at Chicago. But the superstitious sailors overlook the fact that several other vessels that had not braved the fates by beginning anything on Friday, were lost on the same day as the Myrtle, and some of them had not sailed half as many years.—Exchange.

Stories of hidden treasures in sunken wrecks have a peculiar interest for the average writer on daily newspapers. The papers of Superior are again telling, without names, of a company formed and a famous diver selected to explore the deep waters of Lake Huron for the wreck of the steamer Pewabic, lost more than a quarter of a century ago in collision with the Meteor. Of course, the usual fiction about trunks of gold carried by army pay masters, barrels of silverware and other treasures going down with the wreck are repeated, but it is almost needless to add that both Capt. McKay and Capt. Thomas Wilson, who reside in Cleveland, and who were in charge of the two boats have, repeatedly stated that a large quantity of copper is all that might be recovered, in event of the wreck being located.

An Improvised Air Pump.

Chief Engineer Jas. B. Richardson gives the following interesting account of a break-down at sea to Engineering of London:

"While on a passage in the Wickham of Newcastle from Palermo to Philadelphia, and during a heavy gale, the ship straining and engines racing with great force, our after crankpin broke in two, May 1. For some time we tried to go on at a reduced speed; we were then 1,400 miles from our port, and had not sufficient coals to carry us if we worked high pressure, so I conceived the idea of making a pipe connection, and converting the ballast donkey into an air pump. Our air pump was on the after engine, and the circulating pump on the fore engine.

"We took down the after connecting rod, and clamped the broken pin with its own brasses and top end bolts, took out low-pressure valve, fitted a pipe from ballast donkey suction to steam space of condenser, and another pipe from donkey discharge into hotwell by taking off air pump cover. This arrangement converted ballast donkey into a most efficient air-pump, maintaining a steady vacuum and no waste of feed water; it also enabled us to start the high-pressure engine without altering the valves or sheaves. We had no starting valve on high pressure engine, but she started at once on creating a vacuum and giving her steam.

"We carried 85 lbs. of steam, 14 in. vacuum, 48 to 52 revolutions per minute, 132 deg. temperature of feed water, maintaining a speed of from 6 to 7 knots per hour on our usual consumption, viz., 12 tons per day. The only trouble we had was with the fore end of the shaft working forward from where it was broken, and straining the fore engine; this was overcome by fitting a liner on after end of No. 2 main bearing brass, so that the eccentric sheave would take a thrust against it.

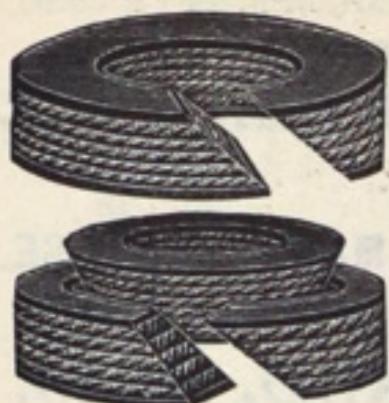
"From the time of the crankpin breaking, until our arrival in port, without assistance, a distance of over 1,400 miles, was exactly nine days."

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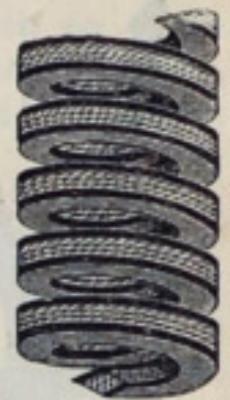


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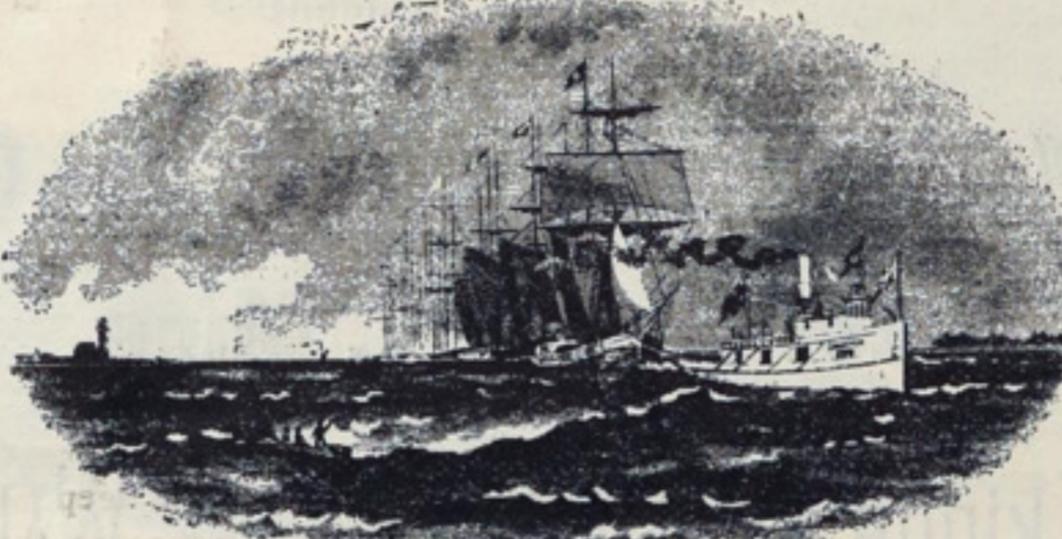


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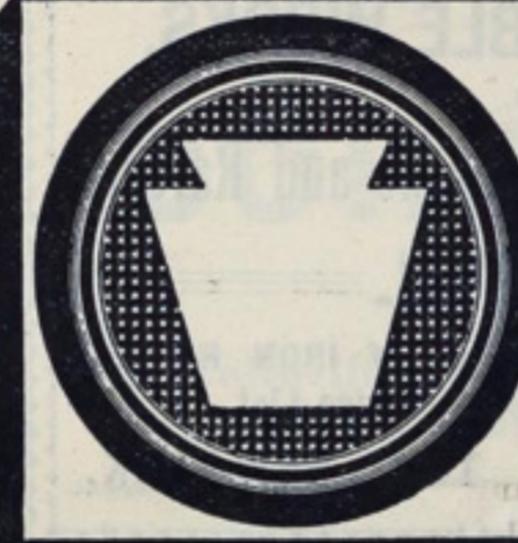
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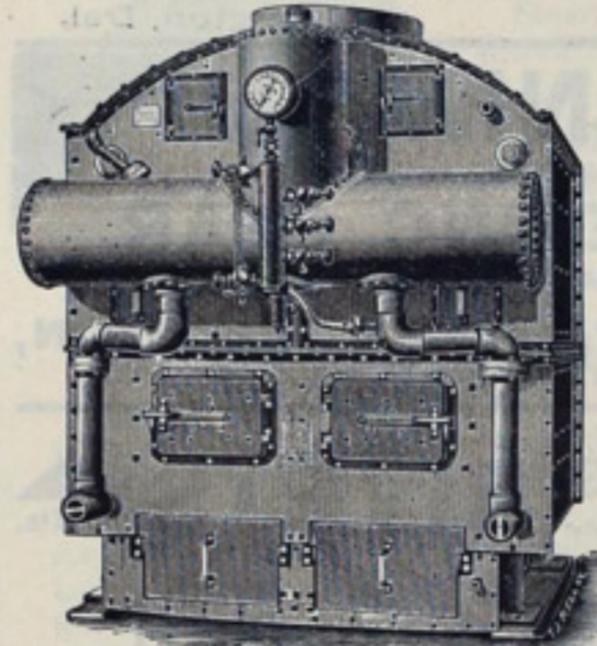
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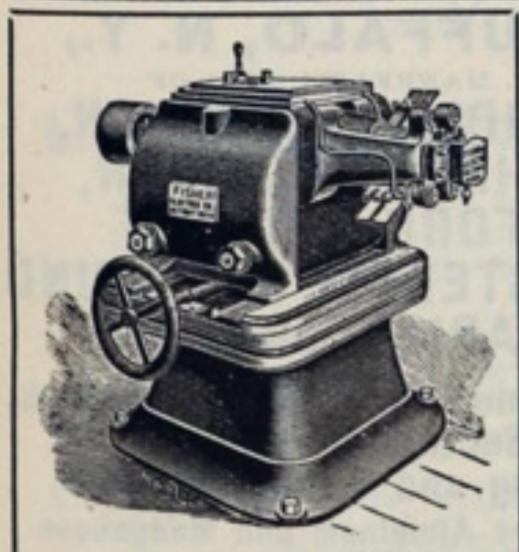
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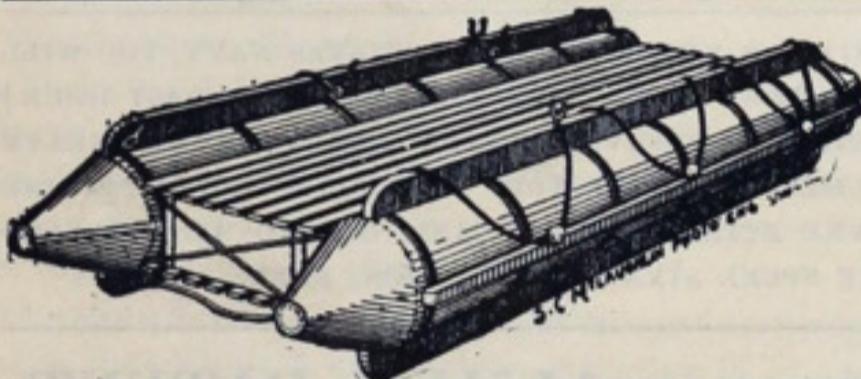
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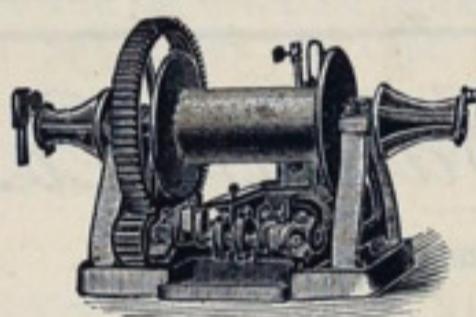
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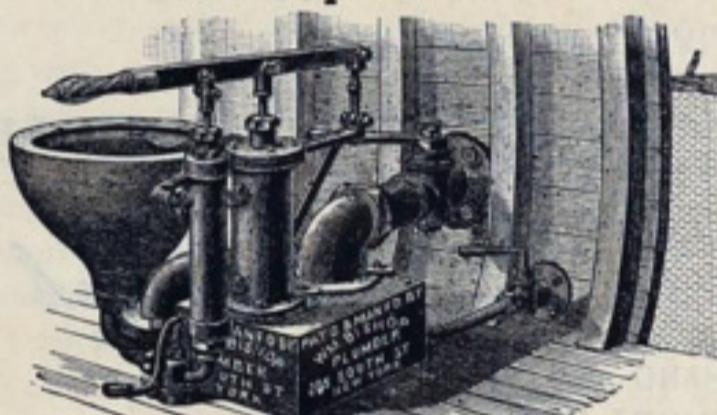
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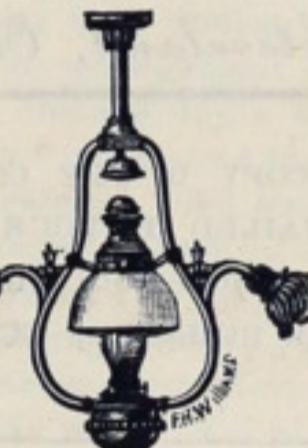


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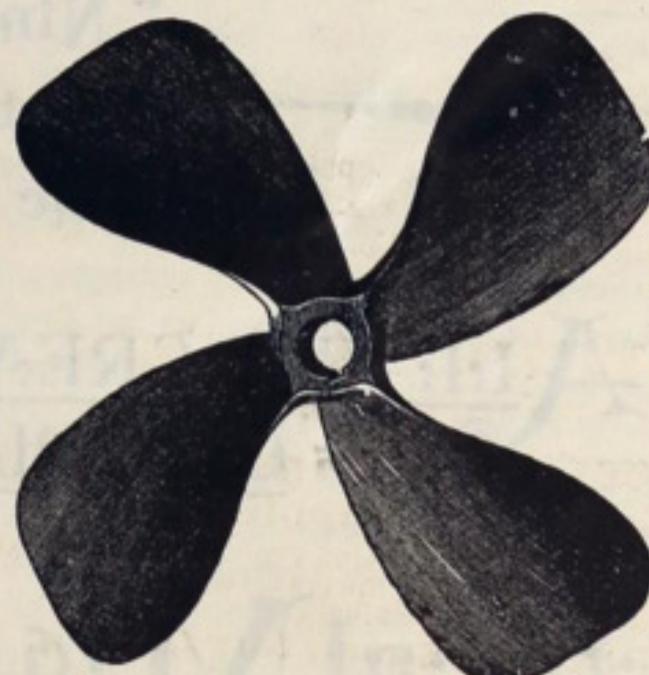
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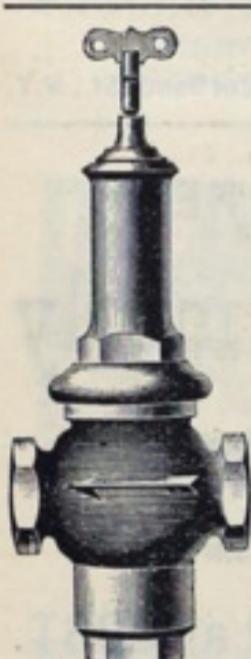
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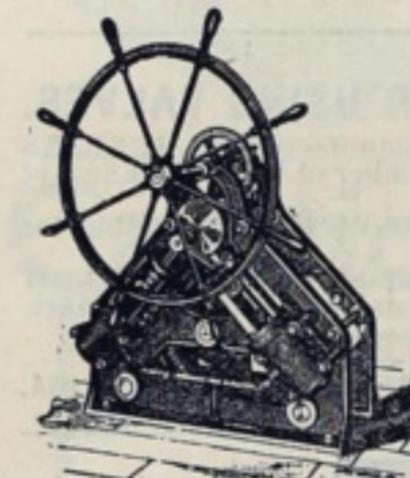
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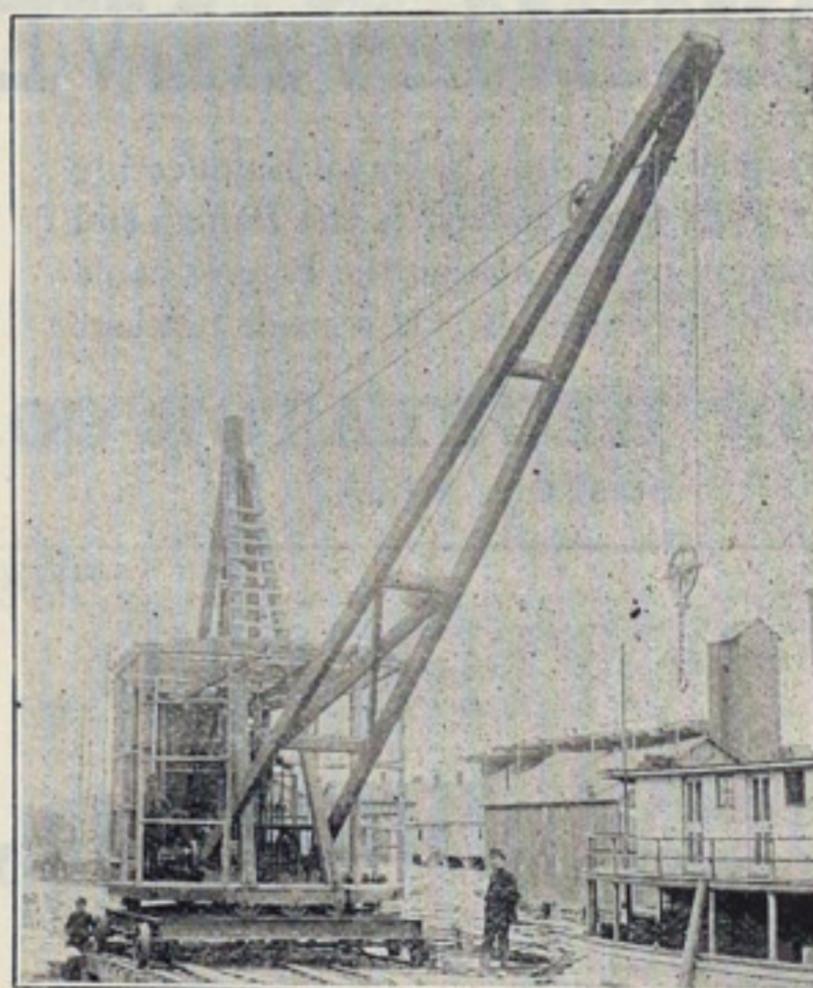
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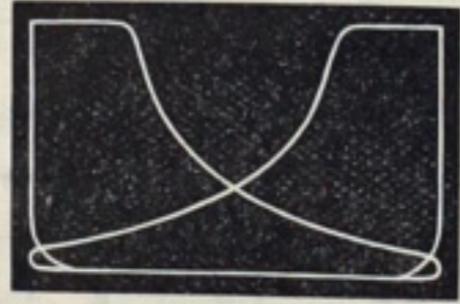
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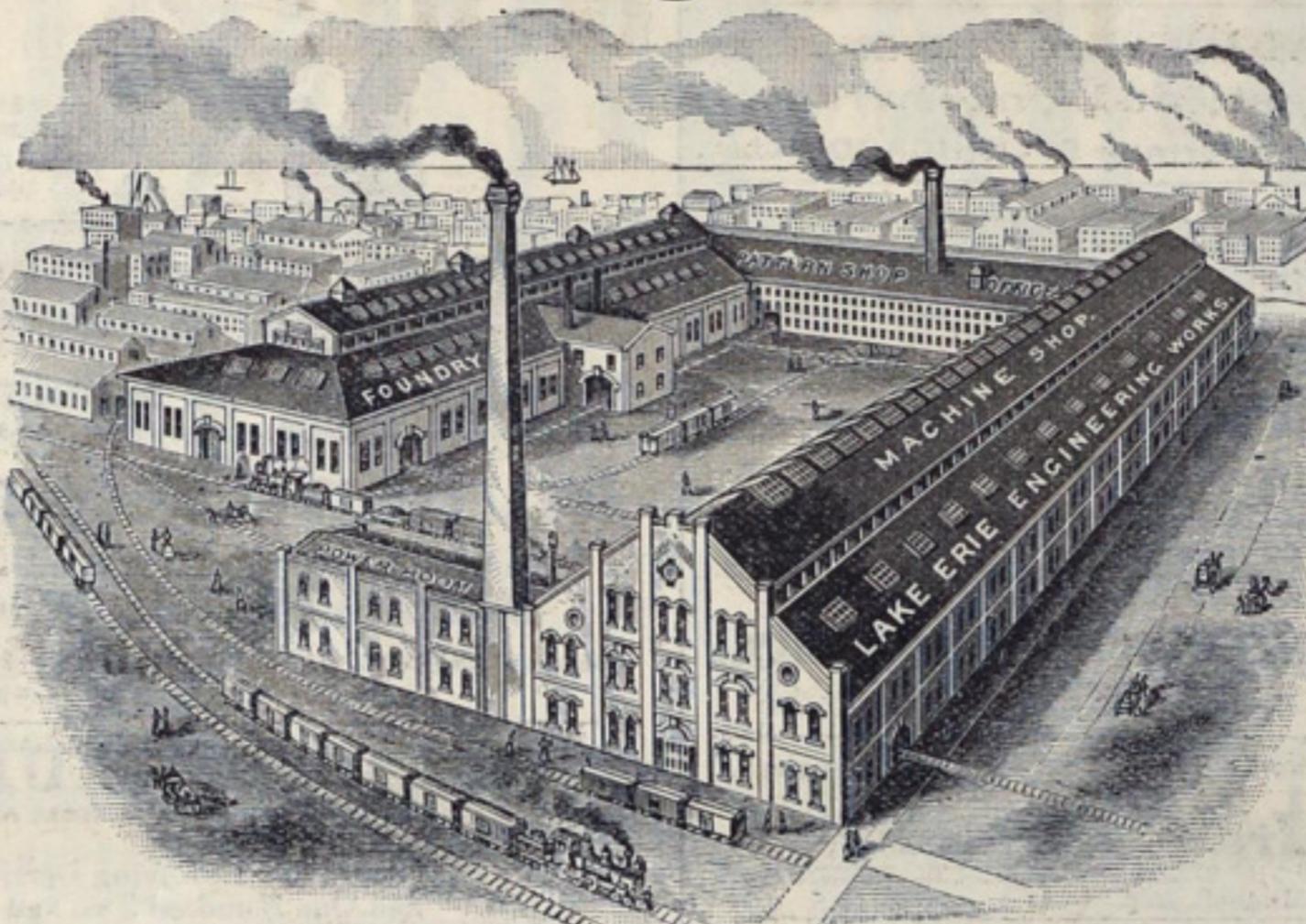
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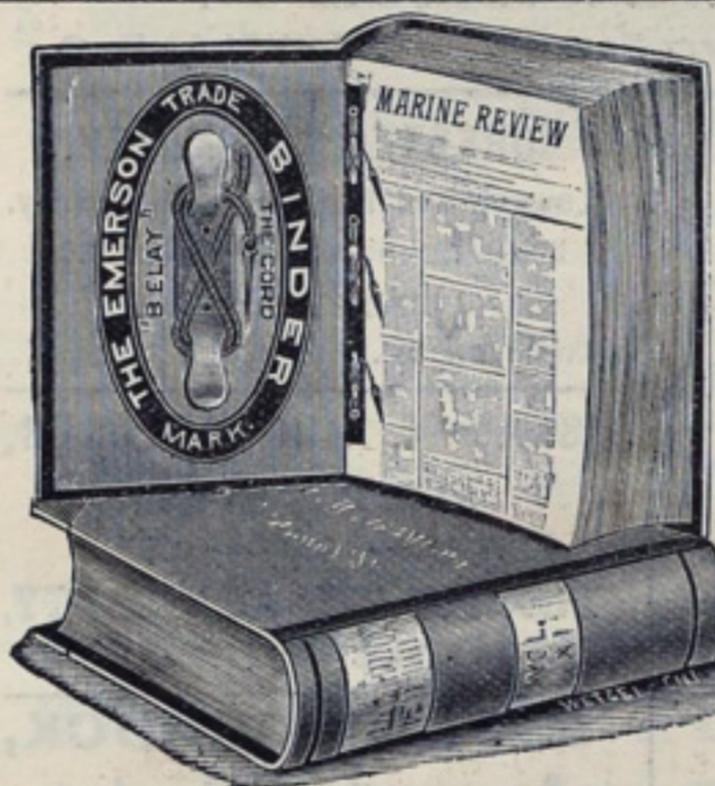
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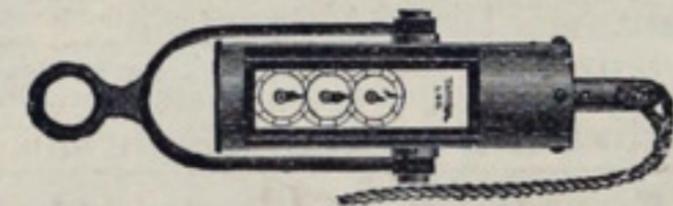
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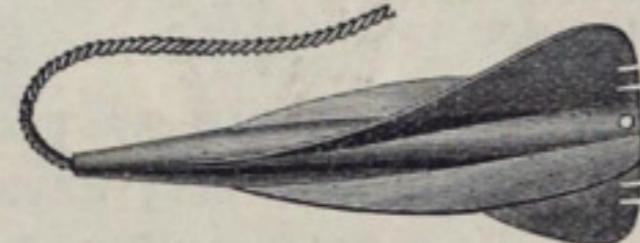
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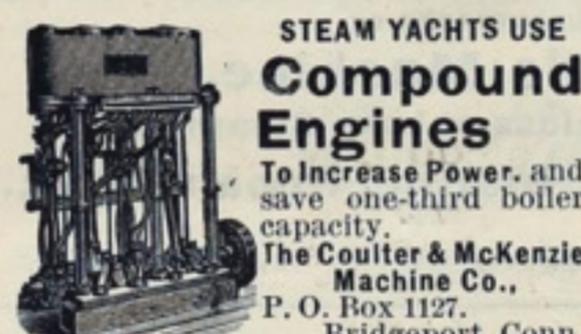
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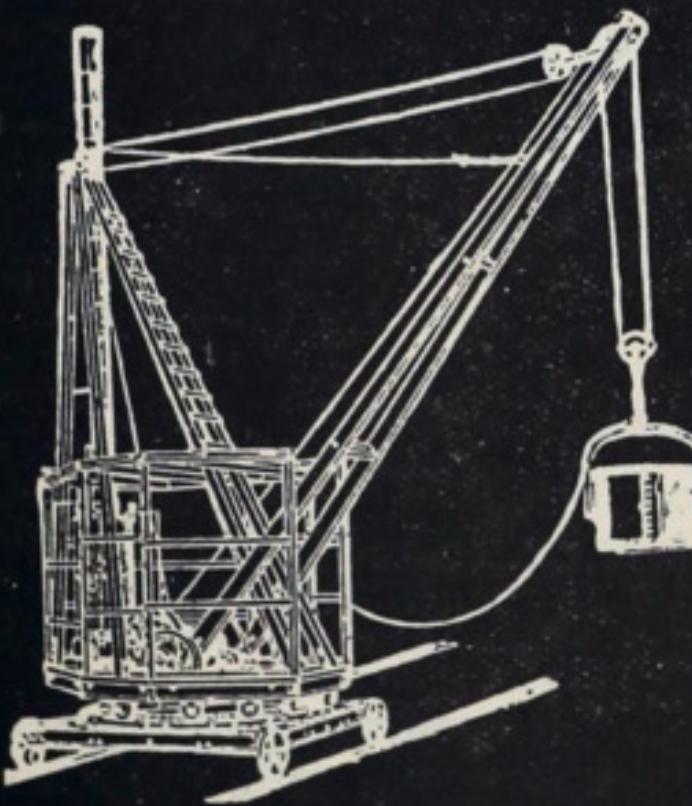
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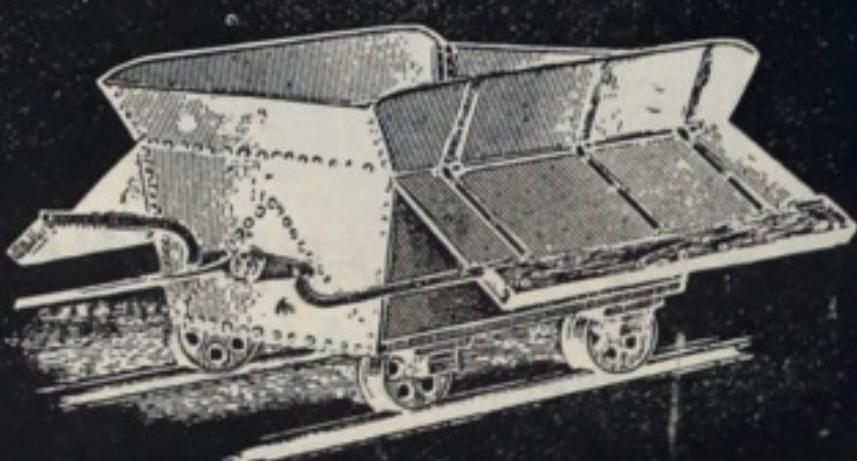


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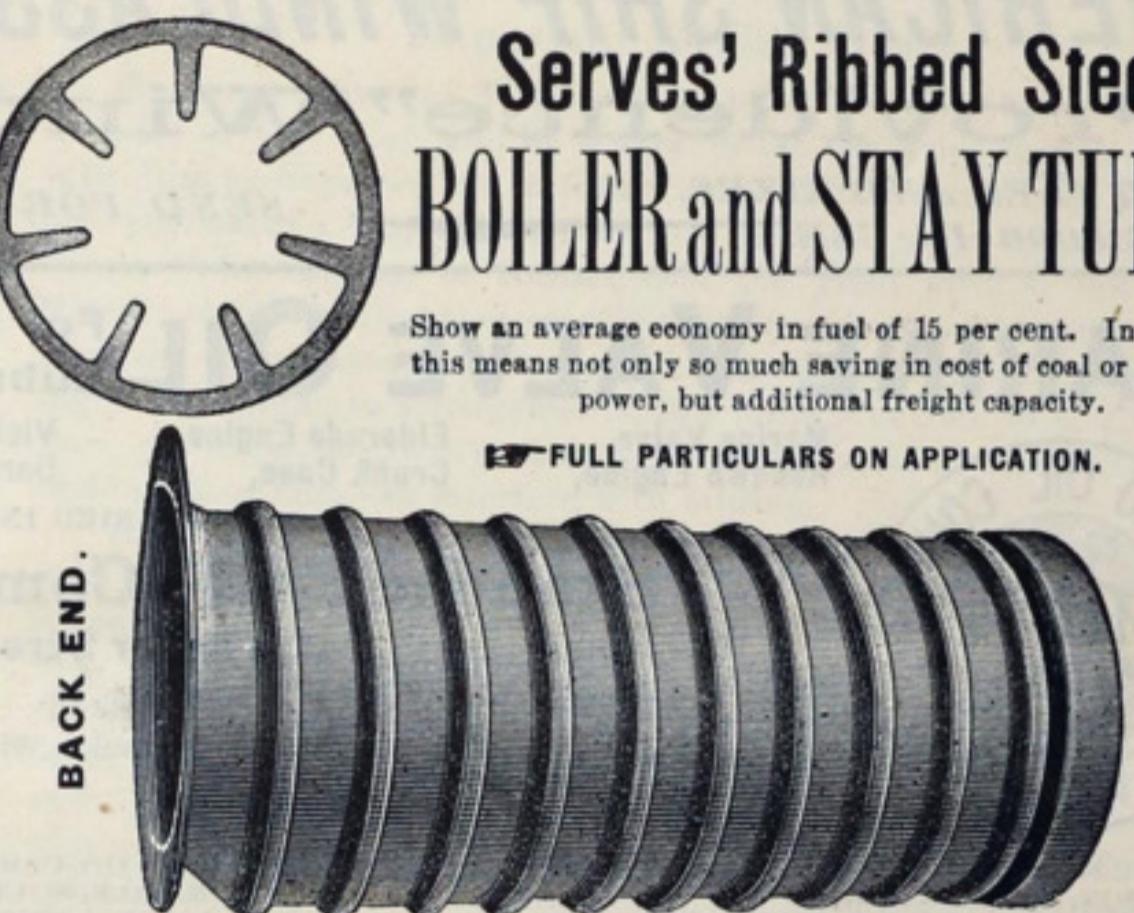
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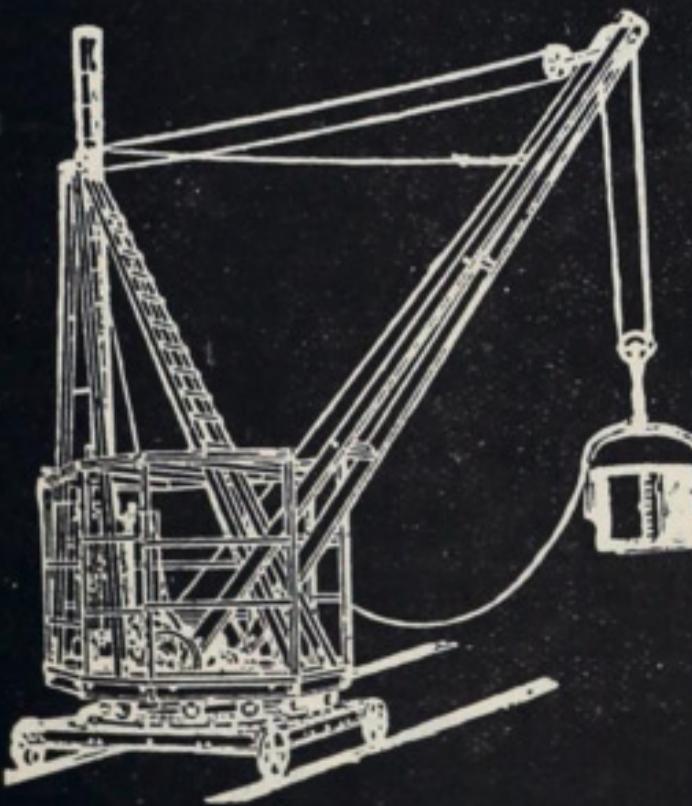
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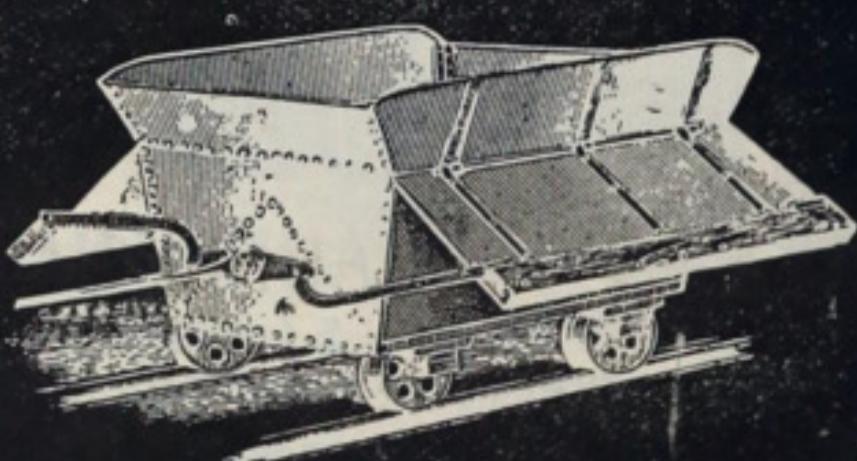


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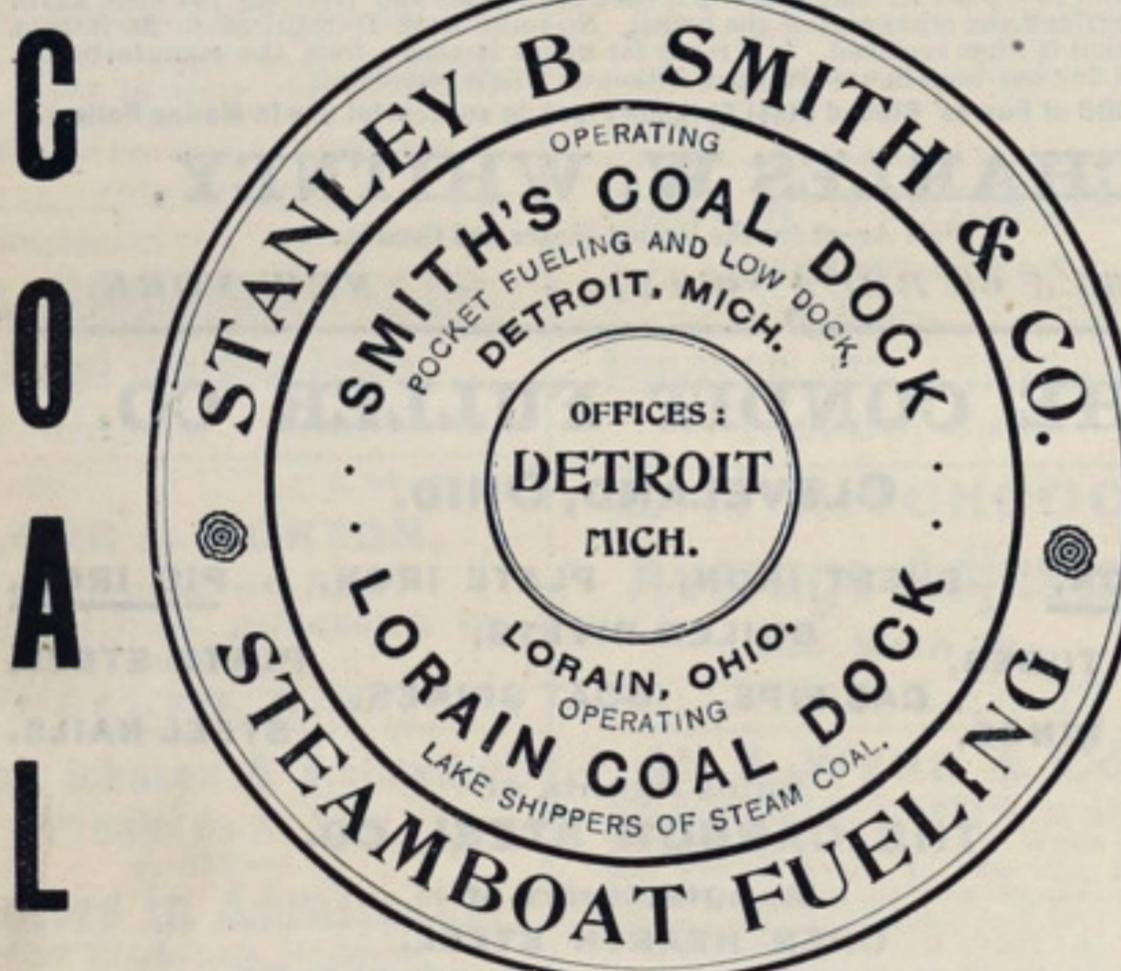
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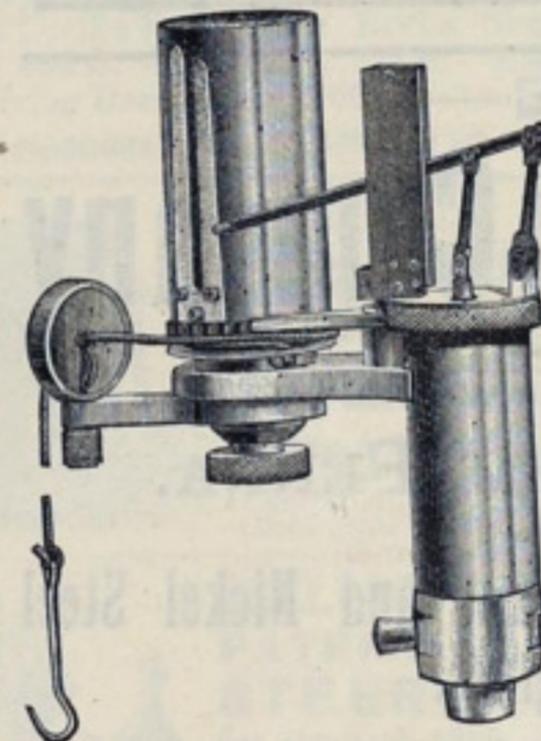
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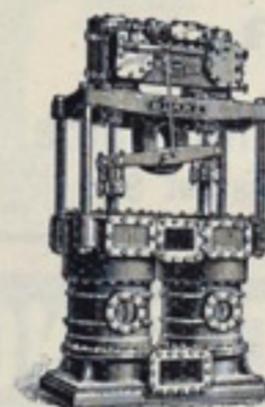
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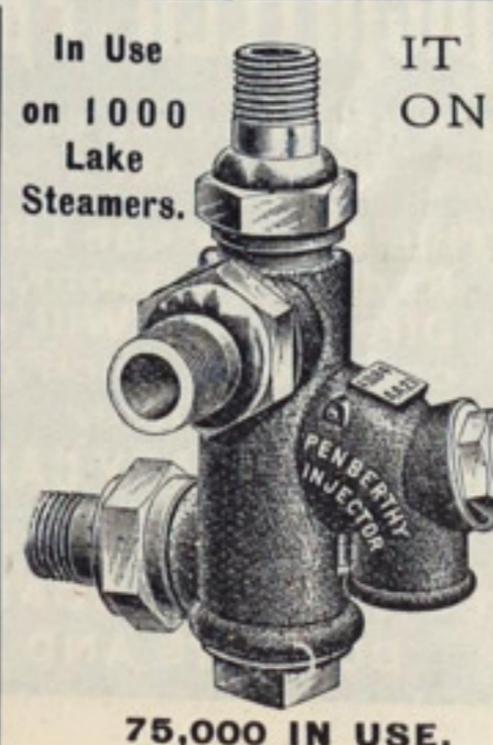
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